Recombinant Human MD2

Catalog Number: 1787-MD/CF

DESCRIPTION

Source *E. coli*-derived

Met	Human MD-2 (Glu17 - Asn160) Accession # BAA78717	IEGRGGGSGGGSGGGS	10-His tag
N-terminus			C-terminus

N-terminal Sequence Analysis Met

Predicted Molecular Mass 19.2 kDa (monomer)

SPECIFICATIONS

Activity Measured by its binding ability in a functional ELISA.
When recombinant human TLR-4 is Immobilized at 2 µg/mL (100 µL/well), the concentration of rhMD-2 that produces 50% optimal binding response is found to be approximately 0.03-0.15 µg/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Supplied as a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.
- 3 months, -20 to -70 °C under sterile conditions after opening.

BACKGROUND

MD-2, also known as lymphocyte antigen 96 and ESOP-1, is a secreted glycoprotein that shares conserved cysteine residues and significant sequence similarity (23%) with MD-1. The gene of human MD-2 encodes a 160 amino acid residue (aa) precursor protein with a 16 aa signal peptide and a 144 aa mature protein, which contains 2 N-glycosylation sites (1). Recombinant secreted MD-2 has been found to exist as disulfide-linked dimers and oligomers (2).

Both MD-1 and MD-2 are accessory molecules that associate with the extracellular leucine-rich repeats (LRR) of Toll-like receptor (TLR) family members, which are type I transmembrane receptors that regulate innate immune responses to microbial pathogens (3, 4). MD-1 binds to RP105 on B cells and macrophages to form the signaling receptor complex for lipopolysaccharide (LPS), a constituent of the outer membrane of Gram-negative bacteria. Similarly, MD-2 interacts with TLR-4 to form the heteromeric receptor that confers LPS responsiveness. MD-2 also associates with TLR-2, albeit with less avidity, to confer responsiveness to cell wall components from both Gram-positive and Gram-negative bacteria. MD-1 and MD-2 are also required for the correct targeting of the TLRs to the cell surface. Although MD-2 glycosylation is not crucial for its surface expression and interaction with TLR-4, it is required for LPS binding and signaling (5).

References:

1. Shimazu, R. *et al.* (1999) J. Exp. Med. **189**:1777.
2. Visintin, A. *et al.* (2001) Proc. Natl. Acad. Sci. USA **98**:12156.
3. Nagai, Y. *et al.* (2002) Nature Immunology **3**:667.
4. Akashi, S. *et al.* (2003) J. Exp. Med. **198**:1035.
5. Correia, J. and R. Ulevitch (2002) J. Biol. Chem. **277**:1845.

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